



SPEC® CINT2006 Result

Copyright 2006-2015 Standard Performance Evaluation Corporation

NEC Corporation

SPECint®2006 = 61.2

Express5800/R120f-1M (Intel Xeon E5-2660 v3)

SPECint_base2006 = 57.8

CPU2006 license: 9006

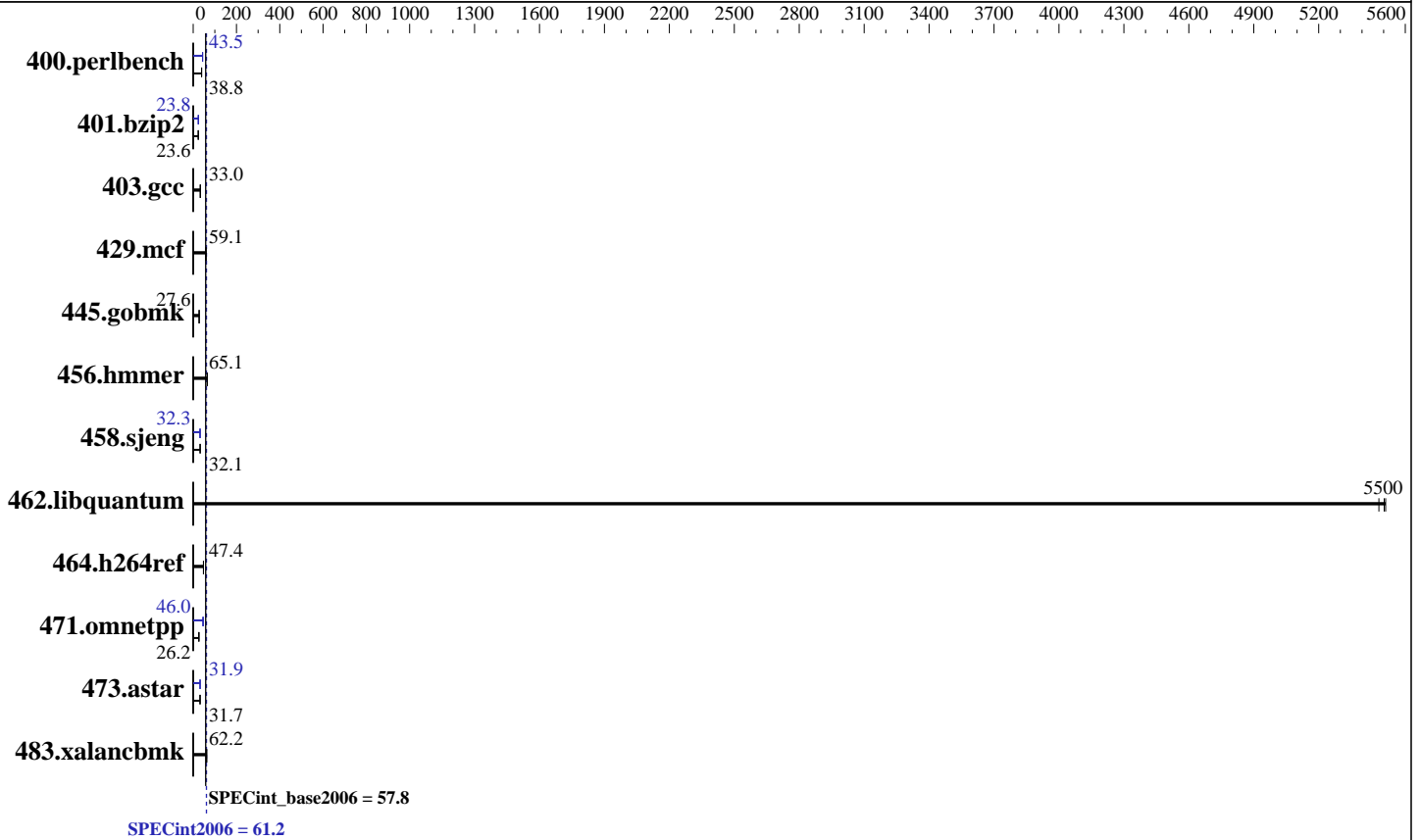
Test date: Oct-2014

Test sponsor: NEC Corporation

Hardware Availability: Feb-2015

Tested by: NEC Corporation

Software Availability: Jul-2014



Hardware

CPU Name: Intel Xeon E5-2660 v3
 CPU Characteristics: Intel Turbo Boost Technology up to 3.30 GHz
 CPU MHz: 2600
 FPU: Integrated
 CPU(s) enabled: 20 cores, 2 chips, 10 cores/chip
 CPU(s) orderable: 1,2 chips
 Primary Cache: 32 KB I + 32 KB D on chip per core
 Secondary Cache: 256 KB I+D on chip per core
 L3 Cache: 25 MB I+D on chip per chip
 Other Cache: None
 Memory: 256 GB (16 x 16 GB 2Rx4 PC4-2133P-R)
 Disk Subsystem: 1 x 250 GB SATA, 7200 RPM
 Other Hardware: None

Software

Operating System: Red Hat Enterprise Linux Server release 6.5 (Santiago)
 Kernel 2.6.32-431.17.1.el6.x86_64
 Compiler: C/C++: Version 15.0.0.090 of Intel C++ Studio XE for Linux
 Auto Parallel: Yes
 File System: ext4
 System State: Run level 3 (multi-user)
 Base Pointers: 32/64-bit
 Peak Pointers: 32/64-bit
 Other Software: Microquill SmartHeap V8.1



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Results Table

| Benchmark | Base | | | | | | Peak | | | | | |
|----------------|-------------|-------------|------------|-------------|------------|-------------|-------------|-------------|------------|-------------|------------|-------------|
| | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio | Seconds | Ratio |
| 400.perlbench | 252 | 38.8 | <u>252</u> | <u>38.8</u> | 251 | 38.9 | 225 | 43.4 | 224 | 43.6 | <u>225</u> | <u>43.5</u> |
| 401.bzip2 | 410 | 23.5 | 409 | 23.6 | <u>410</u> | <u>23.6</u> | 406 | 23.8 | 405 | 23.8 | <u>405</u> | <u>23.8</u> |
| 403.gcc | <u>244</u> | <u>33.0</u> | 244 | 33.0 | 245 | 32.9 | <u>244</u> | <u>33.0</u> | 244 | 33.0 | 245 | 32.9 |
| 429.mcf | 154 | 59.2 | 155 | 59.0 | <u>154</u> | <u>59.1</u> | 154 | 59.2 | 155 | 59.0 | <u>154</u> | <u>59.1</u> |
| 445.gobmk | <u>380</u> | <u>27.6</u> | 380 | 27.6 | 379 | 27.6 | <u>380</u> | <u>27.6</u> | 380 | 27.6 | 379 | 27.6 |
| 456.hammer | 143 | 65.1 | 143 | 65.2 | <u>143</u> | <u>65.1</u> | 143 | 65.1 | 143 | 65.2 | <u>143</u> | <u>65.1</u> |
| 458.sjeng | 377 | 32.1 | 376 | 32.2 | <u>377</u> | <u>32.1</u> | 396 | 30.6 | 375 | 32.3 | <u>375</u> | <u>32.3</u> |
| 462.libquantum | <u>3.77</u> | <u>5500</u> | 3.78 | 5480 | 3.76 | 5510 | <u>3.77</u> | <u>5500</u> | 3.78 | 5480 | 3.76 | 5510 |
| 464.h264ref | 466 | 47.5 | 467 | 47.4 | <u>466</u> | <u>47.4</u> | 466 | 47.5 | 467 | 47.4 | <u>466</u> | <u>47.4</u> |
| 471.omnetpp | 234 | 26.7 | 242 | 25.9 | <u>239</u> | <u>26.2</u> | 134 | 46.6 | <u>136</u> | <u>46.0</u> | 140 | 44.5 |
| 473.astar | 221 | 31.8 | <u>221</u> | <u>31.7</u> | 221 | 31.7 | <u>220</u> | <u>31.9</u> | 220 | 31.9 | 221 | 31.7 |
| 483.xalancbmk | 111 | 62.3 | 112 | 61.8 | <u>111</u> | <u>62.2</u> | 111 | 62.3 | 112 | 61.8 | <u>111</u> | <u>62.2</u> |

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

Platform Notes

BIOS Settings:
 Power Management Policy: Custom
 Energy Performance: Performance
 Patrol Scrub: Disabled
 Demand Scrub: Disabled
 Hyper-Threading: Disabled

General Notes

Environment variables set by runspec before the start of the run:

KMP_AFFINITY = "granularity=fine,compact"

LD_LIBRARY_PATH = "/home/cpu2006/libs/32:/home/cpu2006/libs/64:/home/cpu2006/sh"

OMP_NUM_THREADS = "20"

The Express5800/R120f-1M (Intel Xeon E5-2660 v3) and the Express5800/R120f-2M (Intel Xeon E5-2660 v3) models are electronically equivalent. The results have been measured on the Express5800/R120f-2M (Intel Xeon E5-2660 v3) model.

Transparent Huge Pages enabled with:

echo always > /sys/kernel/mm/redhat_transparent_hugepage/enabled



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Base Compiler Invocation

C benchmarks:

icc -m64

C++ benchmarks:

icpc -m64

Base Portability Flags

400.perlbench: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX_X64
 401.bzip2: -DSPEC_CPU_LP64
 403.gcc: -DSPEC_CPU_LP64
 429.mcf: -DSPEC_CPU_LP64
 445.gobmk: -DSPEC_CPU_LP64
 456.hmmer: -DSPEC_CPU_LP64
 458.sjeng: -DSPEC_CPU_LP64
 462.libquantum: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX
 464.h264ref: -DSPEC_CPU_LP64
 471.omnetpp: -DSPEC_CPU_LP64
 473.astar: -DSPEC_CPU_LP64
 483.xalancbmk: -DSPEC_CPU_LP64 -DSPEC_CPU_LINUX

Base Optimization Flags

C benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -parallel -opt-prefetch -auto-p32

C++ benchmarks:

-xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch -auto-p32
-Wl,-z,muldefs -L/sh -lsmartheap64

Base Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

Peak Compiler Invocation

C benchmarks (except as noted below):

icc -m64

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Peak Compiler Invocation (Continued)

400.perlbench: `icc -m32`

C++ benchmarks (except as noted below):

`icpc -m64`

471.omnetpp: `icpc -m32`

Peak Portability Flags

400.perlbench: `-DSPEC_CPU_LINUX_IA32`
 401.bzip2: `-DSPEC_CPU_LP64`
 403.gcc: `-DSPEC_CPU_LP64`
 429.mcf: `-DSPEC_CPU_LP64`
 445.gobmk: `-DSPEC_CPU_LP64`
 456.hmmer: `-DSPEC_CPU_LP64`
 458.sjeng: `-DSPEC_CPU_LP64`
 462.libquantum: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`
 464.h264ref: `-DSPEC_CPU_LP64`
 473.astar: `-DSPEC_CPU_LP64`
 483.xalancbmk: `-DSPEC_CPU_LP64 -DSPEC_CPU_LINUX`

Peak Optimization Flags

C benchmarks:

400.perlbench: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-opt-prefetch -ansi-alias`

401.bzip2: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div -prof-use(pass 2) -auto-ilp32`
`-opt-prefetch -ansi-alias`

403.gcc: `basepeak = yes`

429.mcf: `basepeak = yes`

445.gobmk: `basepeak = yes`

456.hmmer: `basepeak = yes`

458.sjeng: `-xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)`
`-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)`
`-unroll4`

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Peak Optimization Flags (Continued)

462.libquantum: basepeak = yes

464.h264ref: basepeak = yes

C++ benchmarks:

471.omnetpp: -xCORE-AVX2(pass 2) -prof-gen(pass 1) -ipo(pass 2)
-O3(pass 2) -no-prec-div(pass 2) -prof-use(pass 2)
-opt-ra-region-strategy=block -ansi-alias
-Wl,-z,muldefs -L/sh -lsmartheap

473.astar: -xCORE-AVX2 -ipo -O3 -no-prec-div -opt-prefetch
-auto-p32 -Wl,-z,muldefs -L/sh -lsmartheap64

483.xalancbmk: basepeak = yes

Peak Other Flags

C benchmarks:

403.gcc: -Dalloca=_alloca

The flags files that were used to format this result can be browsed at

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.html>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.html>

You can also download the XML flags sources by saving the following links:

<http://www.spec.org/cpu2006/flags/Intel-ic14.0-official-linux64.20140128.xml>

<http://www.spec.org/cpu2006/flags/NEC-Platform-Settings-V1.2-120f-RevB.xml>

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For other inquiries, please contact webmaster@spec.org.

Tested with SPEC CPU2006 v1.2.

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